Research Article

Surgical and functional outcome of lateral canthal tarsorrhaphy in unilateral paralytic lagophthalmos

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Abstract

Ten patients having unilateral infranuclear 7th nerve palsy with lagophthalmos of different age group and different aetiology underwent lateral canthal tarsorrhaphy to prevent progression of and treatment of severe exposure keratitis in tertiary eye care centre at Govt. Medical College and Hospital, Nagpur. Patients were advised local lubricants, antibiotics. Nearly all pts showed improvement in lid closure, epiphora and keratitis. Lat. tarsorrhaphy supported the lower lid with not much cosmetic disfigurement of the eyeball. Only in a single case the ulcer perforated. Lateral tarsorrhaphy is a good option for poor patients having infranuclear Bell's palsy with severe exposure keratitis who cannot afford to go for temporalis transplant.

Keywords: lateral canthal tarsorrhaphy, unilateral paralytic lagophthalmos.

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INTRODUCTION

Facial nerve palsy is common problem that involves the paralysis of any structure innervated by facial nerve. The most common cause of facial nerve palsy is Bell's palsy, an idiopathic disease that may only be diagnosed by exclusion. Exposure keratitis occurs in facial nerve palsy and may lead to visual loss from corneal damage unless it is treated appropriately. To prevent and / or treat exposure keratitis and reestablish eyelid function tarsorrhaphy is done

AIMS AND OBJECTIVES

To study surgical and functional outcome of lateral canthal tarsorrhaphy in unilateral paralytic lagophthalmos.

To study improvement in clinical signs and symptoms of exposure keratitis and lid closure after lateral tarsorrhaphy in patients of paralytic lagophthalmos.

MATERIAL AND METHODS

It was a hospital based prospective case study. Consecutive case series of 10 eyes of 10 patients from Jan. 2012 to Mar. 2013. 10 eyes with unilateral paralytic lagophthalmos with exposure keratitis that didn't respond to conservative medical line of treatment were treated with lateral canthal tarsorrhaphy. Patients having facial nerve paresis with no significant ocular surface changes, non-paralytic lagophthalmos were excluded from the study. Written informed consent was obtained from all patients. Patients were in the age group between 30 to 55 years with mean age of 43.7 years. Most of the patients were males with male to female ratio of 3:2.

Gender	No. of patients
Male	6
Female	4
Total	**10**

Most of the patients had right sided facial nerve paralysis.

Laterality	No. of patients
Right sided facial nerve palsy	7
Left sided facial nerve palsy	3
Total	**10**

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CAUSES OF FACIAL NERVE PALSY

CAUSES	No. of patients
Bell's palsy	7
Trauma (Post Surgical - mastoidectomy)	2
Chronic otitis media	1
Tumors	0
Total	**10**

CLINICAL FEATURES

Patients had facial asymmetry, Loss of forehead wrinkles and nasolabial fold, Drooping of corner of mouth, Difficulty in keeping food in mouth, Drooping of eyebrow, Inability to close the eye, Uncontrolled tearing, Ocular pain and redness in eye. No patients had h/o diabetes.

Figure 1: Left sided infranuclear facial nerve palsy with lagophthalmos with exposure of ocular surface

Figure 2: Right sided infranuclear facial nerve palsy with lagophthalmos with severe exposure keratitis

Figure 3: Left sided facial nerve palsy with lagophthalmos with exposure keratitis

PRE OPERATIVE ASSESSMENT

Scleral show especially inferiorly was noted. Pre-operatively it was ranging from 2 – 4mm. Duration of signs and symptoms of exposure keratitis was noted.

MANAGEMENT

10 eyes of 10 patients having paralytic lagophthalmos underwent lateral tarsorrhaphy. Indication of tarsorraphy in all patients was to prevent or to treat exposure keratitis. All patients underwent surgery by a single surgeon at GMCH, Nagpur. The surgical steps included marking of intended lateral tarsorrhaphy, splitting of grey line and excision of anterior lamella and suturing of upper and lower limbs of lateral canthal tendon and canthal angle reformation.

Figure 4: Post operative photographs

RESULTS

10 eyes of 10 patients having paralytic lagophthalmos underwent lateral tarsorrhaphy. Patients were in the age group between 30 to 55 years with mean age of 43.7 years. Most of the patients were males with male to female ratio of 3:2.Laterality - right sided facial nerve palsy was seen in 7 patients and left sided 3 patients. In all cases type of tarsorraphy was permanent. 9 patients needed single tarsorrhaphy and 1 patient needed repeat tarsorrhaphy because of partial opening of tarsorrhaphy. Clinical improvement in signs and symptoms of exposure keratitis was observed in nearly all the cases. Duration of follow-up: 3 months. Mean time to epithelial healing after tarsorraphy was 15 days (with range of 10 – 20 days) Inferior scleral show was reduced from 3 mm pre-operatively (range 2 to 4 mm to 0.3 mm post op. with a range of 0 – 0.5 mm at 3 months followup.

COMPLICATIONS

Recurrence of exposure keratitis was seen in none of the patients. Single patient required repeat tarsorrhaphy all patients were consmetically satisfied.

DISCUSSION

The main cause of lagophthalmos is facial nerve paralysis (paralytic lagophthalmos) but it also occurs after trauma or surgery (cicatricial lagophthalmos) or during sleep (nocturnal lagophthalmos). The inability to blink and effectively close the eyes may lead to corneal exposure and excessive evaporation of tear film. While doing tarsorrhaphy it is equally important for the patient to regain a cosmetically acceptable appearance. Conservative treatment includes copious lubrication by eye drops and eye ointment. Other options available are Taping of eyelids, Bandage soft contact lenses, Moisture chamber glasses, Conjunctival flaps, Amniotic membrane grafts, Tissue Adhesives, Glued on hard contact lenses, Blow out patch grafts, Gold weight implants, Palpebral spring insertion, Penetrating keratoplasty, Chemodenervation to yield protective ptosis and Temporalis transplant.

CONCLUSIONS

Lateral tarsorrhaphy is safe and effective surgical procedure for poor patients having infranuclear Bell's palsy with severe exposure keratitis, It is simple and effective in achieving functional eye closure providing symtomatic relief and faster corneal epithelial defect healing. Therefore, it is of benefit in cases of patients having exposure keratitis with good success rate and minor complications. Early treatment intervention by lateral tarsorrhaphy is important to help avoid severe complications of exposure keratitis like corneal perforation and endophalmitis.

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